



Corrugated Glow

Written By: Ross Orr

TOOLS:

- [Drill \(1\)](#)
- [Drill bit \(1\)](#)
- [Hand saw \(1\)](#)
- [Phillips screwdriver \(1\)](#)
- [Tin snips \(1\)](#)
- [Utility knife \(1\)](#)
- [Wire cutters \(1\)](#)
or pliers with cutting notch

PARTS:

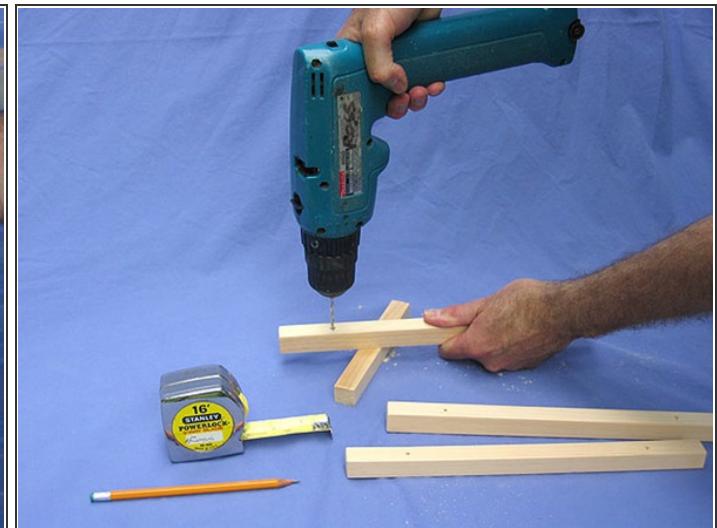
- [Corrugated plastic sheeting \(1\)](#)
9½" of 26"-wide, should have 10 wavy ribs
- [Hardwod sticks \(1\)](#)
¾" square pine or hardwood sticks (3' per lantern)
- [Utility wire \(42" per lantern\)](#)
- [Truss-head screws \(6 per lantern\)](#)
- [Sheet metal \(1\)](#)
- [Clear tape \(1\)](#)
or ¼" heat-shrink tubing
- [Tea light candle \(1\)](#)
- [Sandpaper \(1\)](#)

SUMMARY

A friend of mine recently finished a deck remodel, whose highlight (literally) is a transparent corrugated roof that diffuses sunlight in a delightful way. This inspired me to find some way to continue that glow after sunset, in the form of a lantern illuminated by tea light candles.

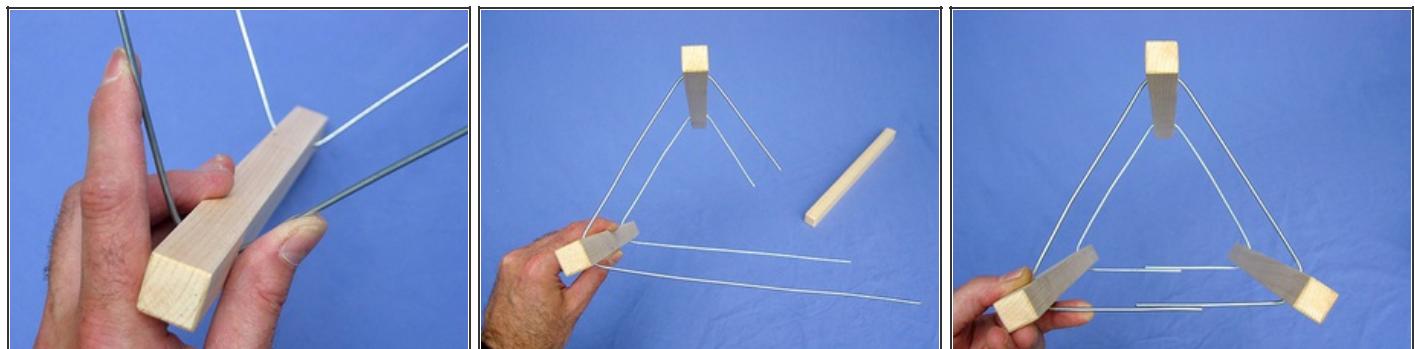
There are many colors and styles of corrugated roofing available, and whole 8-foot sheets (Sequentia brand) are \$23 at my local lumberyard — that's enough material for up to 10 lanterns. The kind my friend used for the deck is fiberglass-reinforced plastic (FRP), which diffracts light with a sparkly halo. After some feverish experimenting with cut-off scraps, I eventually came up with the graceful lantern design shown here. In the following steps, proceed carefully so you don't crack the plastic, which is somewhat brittle.

Step 1 — Cut the sheet to size, cut uprights and wire.

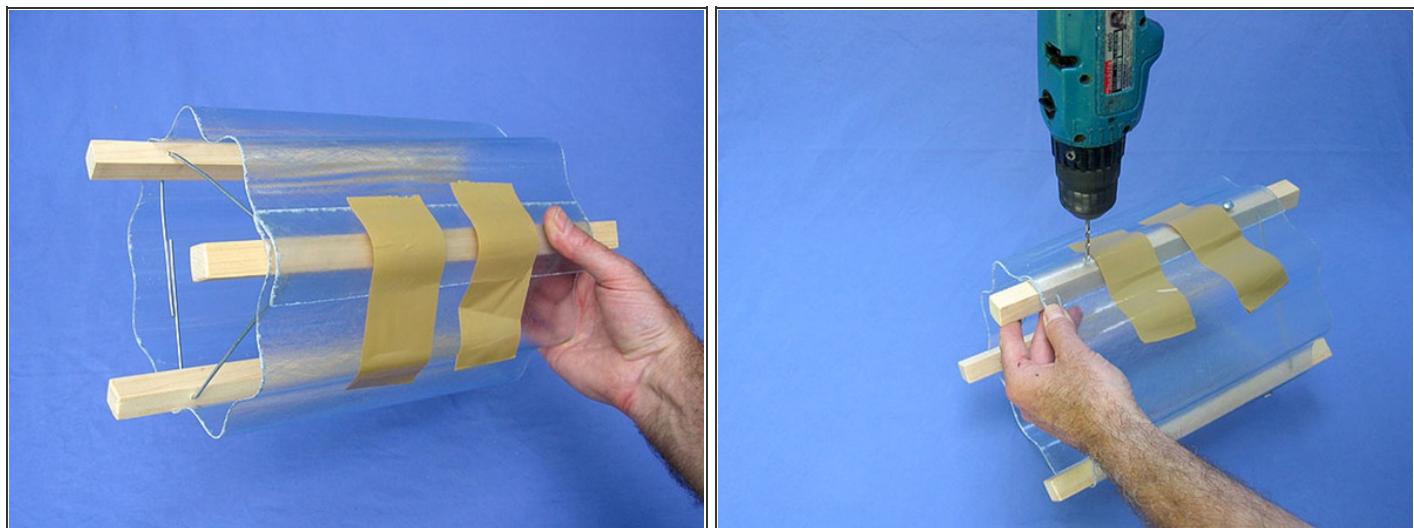


- Mark a 9 1/2" strip from the corrugated sheet, cutting across the ribs. This material is a bit too brittle to cut with a saw, but tin snips work well.
- Quick Tip: Cutting plastic can leave ragged edges, which should be sanded lightly until smooth to the touch. 
- Cut 3 wooden sticks (uprights) 12" long. Sand their sides and smooth sharp corners with 120-grit sandpaper. Measure 2" from each end and drill crossways holes slightly larger than the wire you are using.
- When drilling the screw holes, if you don't have extra hands helping you, try holding the ends of the wood uprights between your knees for support as you're drilling through the plastic and driving the screws. Or slip a length of 1x scrap wood (on edge) through the middle of the frame, and prop up its ends to support the work.
- Unroll several feet of wire, carefully unbending it before cutting. Cut 2 pieces 21" long. Thread the wires through the holes in one of the wooden uprights until an equal length extends from each side. Bend the wires upward on both sides of the wood to form a "V" of about 60 degrees.

Step 2 — Connect the uprights.



- Thread the wires through the 2 holes of the next wooden upright. Slide the sticks together until there is $5\frac{3}{4}$ " of wire between them. Make sure this spacing is correct, then twist the second stick and bend the wires going through it to form another "V."
- Repeat with the third wooden upright. You should end up with a triangular framework where the free ends of the wire align, overlapping by about $1\frac{1}{2}$ ". The framework will probably be crooked at first; tweak the wire bends slightly until the frame is symmetrical and stands straight. Leave the free wire ends unattached for now.

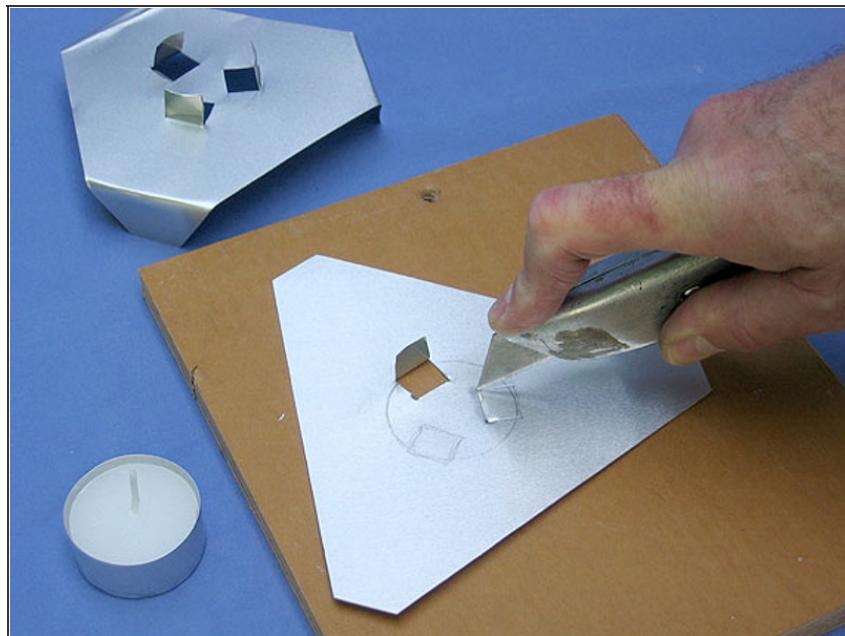
Step 3 — Attach the corrugated plastic.

- Roll up the corrugated plastic into a tube, over-lapping the first and last ribs. This material is stiff enough that it will try to spring open again, so be careful! You may need an extra pair of hands here, or use packing tape, spring clips, etc., to keep the tube held together in the following step.
- Slip the wood/wire framework inside the corrugated plastic tube, with one upright behind the overlap. Make sure that the wood protrudes an equal distance beyond the plastic at each end. Adjust the rib overlap so it is snug and even from top to bottom, and then tightly hold the plastic and wood together.
- With a drill bit slightly larger than your screw threads, drill holes 2" from each edge of the plastic. (Don't drill into the wood.) Drive the screws into the wood uprights, but don't tighten them too much, and stop when the head just begins to press against the plastic. Check that the other 2 uprights are straight within their ribs, and then finish the remaining holes and screws.

Step 4 — Join the wire ends.

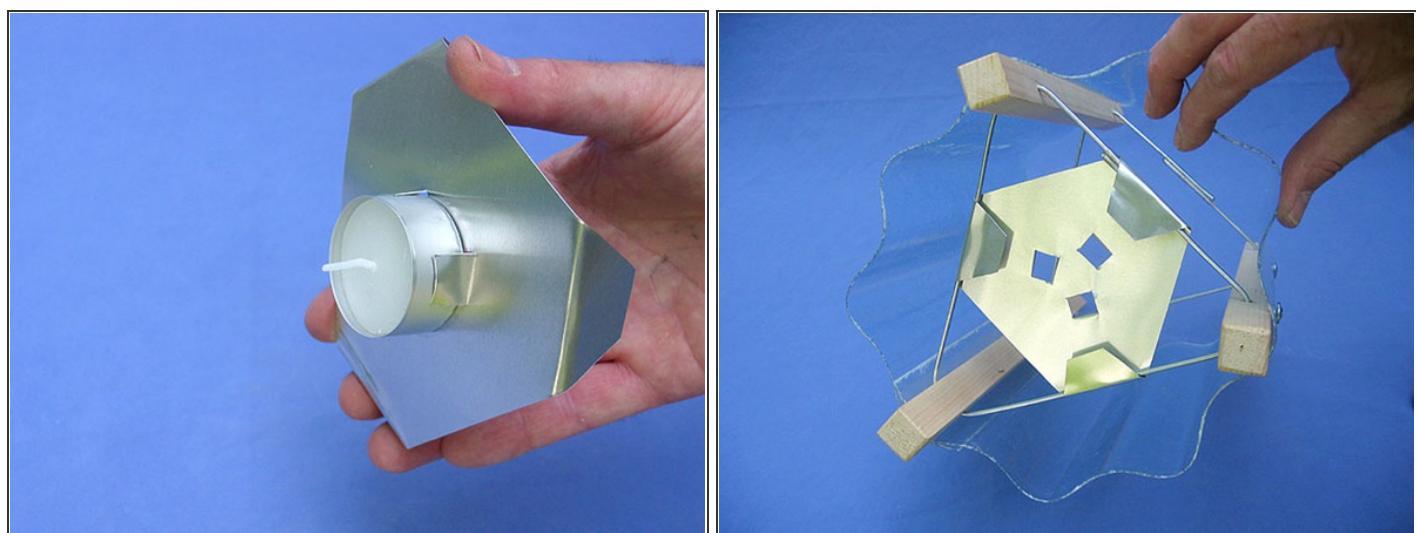
- Now you can join the overlapping wire ends together. Wrapping them in clear tape works fine, but for a more finished look, I used 1/4" heat-shrink tubing. (A wonderful craft material sold by electronics suppliers, this shrinks down to half of its original diameter when held over a flame.)

Step 5 — Make the candle base.



- To make a platform for the candle, I cut a triangle from thin-gauge aluminum, although a coffee-can top works, too. Trace the outline of the candle in the center and mark 3 rectangular tabs within this circle. With a sharp utility knife, puncture the metal and cut 3 sides of the tabs, then fold them upward.
- Make sure that the tabs will snugly grasp the sides of a tea light, even when held sideways. Corrugated plastic can catch fire if exposed to direct flame (which smells horrible!), so for safety's sake, don't skip this step.

Step 6 — Attach the candle base.



- Mark the locations of the wires on the underside of the platform. Use a straightedge to start bending each flap downward. Put the platform in place and finish wrapping the folded flaps around the wires to secure them.

Step 7 — Enjoy the glow.



- Flip the lantern right-side up again, snugly place your candle inside, and enjoy the glow.

This project first appeared in [CRAFT Volume 02](#), pages 114-116.

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